

UNIVERSITY OF SOUTHERN CALIFORNIA
UNIVERSITY PARK
LOS ANGELES 7

DEPARTMENT OF CHEMISTRY

March 26, 1956

Dr. F. H. C. Crick
Medical Research Council Unit
Cavendish Laboratory, Free School Lane
Cambridge, England

Dear Francis:

As you may see from the enclosed (one is for Max) I finally got around to finishing and writing up the base pairings I started 3 years ago, mainly because it enabled me to get an expense-paid trip to Washington. I must explain footnote 9, a point you may remember we had not a little discussion over, with the opposite conclusion. Pauling, who as a member of the National Academy, had to approve and submit the manuscript, said he had wondered about the triple hydrogen bond ever since Jim's and your structure appeared, and then he decided to take this opportunity to make this point in print. I thought it was pointless to explain that we had gone over this before, so there it is.

Jack Dunitz told me he had heard (from Dorothy?) that you and Alex had worked out an RNA structure, but no details were available. Is this true? I haven't been up to Cal Tech much lately (it's so near and yet so far) since we finished that polyglycine thing, so I don't know what they up there might know. These seem to be cryptic days. First the RNA rumors. Then you and Alex publish a collagen structure but don't let on what it is. Then Bear announces he has tested your structure, but doesn't state how it came out. Then Max writes he has an alternative to Harker's method, but that's all he says. O tempora, O mores! I have been tied up with other structures - all non-biological - and have been going over to UCLA often to use the SWAC with Ken Trueblood (who, by the way, will be at Oxford next fall). He periodically receives a bundle from Oxford, and then is up to his ears in B-12 for several sessions, but it appears the main job is done at last.

Regards,



(Or) Jerry Donohue

jd
Enclosure

PS Max wrote that he would ask the editor of Nature if you + Alex could answer our note. This may be all right, but personally I don't see what there is to answer.

A Note on the Structure of Polyglycine II

Very recently Crick and Rich¹ suggested a structure for the new form of polyglycine, "polyglycine II", first discussed by Bamford, Brown, Cant, Elliott, Hanby, and Malcolm². The test of the correctness of a proposed structure lies not only in whether it is a reasonable one, but, *a fortiori*, in whether it is in agreement with experimental results. In the case of polyglycine II the principal experimental results are the X-ray diffraction data obtained from powder samples by Bamford *et al.* Crick and Rich stated in their paper that they had made a comparison of the observed intensities and spacings of the diffraction lines with those calculated for their structure. Instead of presenting this comparison they stated that "Their X-ray data (Bamford *et al.*) are in good qualitative agreement with our calculations".

We have now also made the calculations of spacings and intensities and have compared them with the photograph published in *Nature*³. Our results will be published elsewhere.

Jerry Donohue

University of Southern California
Los Angeles

Richard E. Marsh

Robert B. Corey

California Institute of Technology
Pasadena

¹Crick, F. H. C., and Rich, A., *Nature*, **176**, 780 (1955)

²Bamford, C. H., Brown, L., Cant, E. M., Elliott, A., Hanby, W. E., and Malcolm, E. R., *Nature*, **176**, 396 (1955)